

only one (the lower) post-temporal fossa open on each side. The maxilla is produced into a tooth-like prominence, which occupies a similar position to the tusks of *Gordonia*; but the bone is too thin to have supported a tooth, and in all probability it was covered by a horny beak. The lower jaw has a strong symphysis, a distinct lateral vacuity, and the oral margin, at the front of each ramus, bears a rugose prominence.

*Elginia mirabilis* is the name proposed for the skull of a Reptile, which, on account of the extreme development of horns and spines, reminds one of the living Lizards *Moloch* and *Phrynosoma*. The exterior of this skull is covered in by bony plates, the only apertures being the pair of nostrils, the orbits, and the pineal fossa. The surfaces of the bones are deeply pitted, as in Crocodiles and Labyrinthodonts. The horns and spines, which vary from  $\frac{1}{4}$  in. to nearly 3 in. in length, are found upon nearly every bone of the exterior. The development of the epiotics and the arrangement of the external bones resemble more the Labyrinthodont than the Reptilian type of structure, while the palate, on the other hand, conforms more nearly to the Lacertilian type, and, with the exception that the pterygoids are united in front of the pterygoid vacuity, agrees with the palate of *Iguana* and *Sphenodon*. There are four longitudinal ridges along the palate, some of which seem to have carried teeth. The oral margin was armed with a pleurodont dentition, there being on each side about twelve teeth with spatulate crowns, laterally compressed and serrated. With the exception of the smaller number of the teeth, we have here, on a large scale, a repetition of the dentition of *Iguana*. This peculiar skull seems to show affinities with both Labyrinthodonts and Lacertilians, and is unlike any living or fossil form; its nearest, though distant, ally apparently being the *Pareiasaurus* from the Karoo Beds of South Africa.

### III. "The Electromotive Properties of the Skin of the Common Eel." By E. WAYMOUTH REID, Professor of Physiology in University College, Dundee. Communicated by Professor M. FOSTER, Sec.R.S. Received November 19, 1892.

(Abstract.)

1. The assumption that the E.M.F. of the current of rest of the skin of the Fish is entirely due to mucin-metamorphosis, and that it is not possible to attribute it to the presence of glandular elements is negatived, in the case of the Eel, by the absence of any such mucinous change in the superficial epidermic cells and by the presence of abundance of secretory cells throughout the structure.

2 D 2

2. The existence of considerable differences of potential between two contacts upon the outer surface of the skin, and the fact that such E.M.F. is capable of excitatory augmentation upon mechanical stimulation, coincides with the assumption that the E.M.F. of the current of rest is the outcome of glandular processes of variable activity and is not compatible with the theory of origin of the E.M.F. in mucin-metamorphosis.

3. The reductions in the E.M.F. of the normal rest current following exposure of the skin to carbonic acid gas and to the vapour of chloroform, and the subsequent recovery upon admission of air, are strong evidence that the origin of the E.M.F. is in some active vital processes taking place in the skin, and it is reasonable to assume that these occur in its secretory elements.

4. The demonstration that the E.M.F. of the skin of the Eel undergoes an excitatory variation as a result of electrical, thermic, and mechanical stimulation, is in accordance with what is known to occur in other glandular structures, and the fact that such excitatory change manifests itself as a positive variation of the current of rest agrees in the main with the phenomena observed in other cases.

5. The fact that chloroform narcosis excludes the possibility of the excitatory variation upon stimulation, at the same time as it reduces the E.M.F. of the normal rest current to zero, supports the assumption that the E.M.F. of the current of rest and that of the current of action originate in one and the same source.

6. Finally, the reduction of the E.M.F. of the normally directed current of rest by atropinisation and the complete absence of any excitatory variation under such conditions, are facts strongly in favour of the hypothesis that both the E.M.F. of the current of rest and that of the current of action are from a glandular source.

IV. "Preliminary Note on the Relation of the Ungual Corium to the Periosteum of the Ungual Phalanx." By F. A. DIXEY, M.A., M.D., Fellow of Wadham College, Oxford. Communicated by E. A. SCHÄFER, F.R.S. Received November 22, 1892.

The corium underlying the epithelium of the developing nail in the human embryo is at an early age distinguishable from the cutis vera of the remainder of the digit by its greater thickness and density. Opposite the groove across the dorsal surface of the digit, which represents the anterior border of the growing nail, the thick firm connective tissue layer constituting the ungual corium does not thin out or pass into the general corium; but, still preserving its original thickness, it sinks deeply into the substance of the digit, and travers-